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DRAFT AMENDED CLEANUP ACTION PLAN
ABLE PEST CONTROL SITE
18115 62ND AVENUE NE
KENMORE, WASHINGTON

Submitted By
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For:
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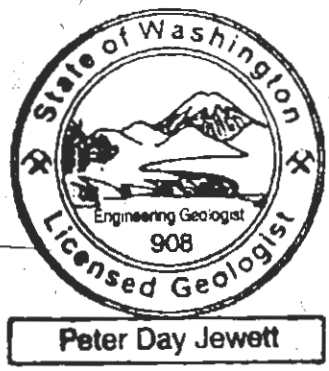

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Note: For all referenced Appendices in this report refer to the *Final Draft Cleanup Action Plan* prepared by Farallon dated May 23, 2000.

APPENDICES

1.0 INTRODUCTION

Farallon Consulting LLC (Farallon) has prepared this Draft Amended Cleanup Action Plan (CAP) for the cleanup of pesticides in soil and perched groundwater in the vadose zone at the Able Pest Control Site located at 18115 62nd Avenue NE in Kenmore, Washington (herein referred to as the site, Figure 1). The site is defined as the area where concentrations of pesticides were detected above the applicable cleanup levels in soil and includes all of the property located at 18115 62nd Avenue NE (62nd Avenue Property), a portion of the storm water drainage ditch located on the east side of the 62nd Avenue Property, the northwest portion of the property located adjacent –south of the 62nd Avenue property at 6124 NE 181st Street (Preschool Property), and a small portion of the adjacent-north property in Kenmore Washington (Figure 2).

1.1 PURPOSE

This CAP has been developed in accordance with the Washington State Department of Ecology (Ecology) *Model Toxics Control Act Cleanup Regulation* (MTCA), Chapter 173-340 of the Washington Administrative Code (WAC). In accordance with WAC 173-340-360(2), the selected cleanup action presented in the RI/FS will meet the applicable cleanup levels at the defined points of compliance, protect human health and the environment, comply with applicable state and federal laws, and provide for compliance monitoring.

This CAP provides specific detail for the implementation of Alternative No. 5: Soil Excavation and Off-Site Disposal at an Approved Landfill and/or Incineration which includes excavation and off-site disposal of soil with concentrations of one or more of the target pesticides above the applicable cleanup levels, as well as monitoring for concentrations of pesticides in perched groundwater in the vadose zone after completion of the soil removal.

This alternative was presented in the RI/FS, which was conducted under the Ecology Voluntary Cleanup Program (VCP). The RI/FS was reviewed by Ecology in January 2000. Ecology has confirmed that the RI/FS adequately characterizes the site and provides sufficient information for selection of a cleanup alternative. The site cleanup will be conducted under an Agreed Order No. OOTC PNR – 1151 (Agreed Order) with Ecology to meet the requirements of the Agreed Order for removing the site from the Hazardous Site List in accordance with WAC 173-340-330 (4).

1.2 CLEANUP ACTION PLAN ORGANIZATION

Combined within this CAP, either directly or by reference, are the following three documents which have been developed for proceeding with soil cleanup at the site: (1) Engineering Design Report (WAC 173-340-400[4][a]), (2) Sampling and Analysis Plan (WAC 173-340-820) and Compliance Monitoring Plans (WAC 173-340-410) (combined), and (3) Safety and Health Plan

concentrations of pesticides in the shallow subsurface soils may affect groundwater underlying the site. The results of the soil boring confirmed that impermeable glacial till extends from the surface to 49.5 feet below ground surface (bgs) beneath the site. A groundwater-bearing interval was not encountered in Boring SB-1 to the total depth explored of 49.5 feet bgs.

2.3.3 Remedial Investigation/Feasibility Study

The information obtained from the prior investigations and interim remedial measures conducted at the site were used to develop the scope of work for the RI/FS of the site. The purpose of the RI/FS was to ascertain the distribution of pesticides on the site by collecting and analyzing a sufficient number of soil samples to fully characterize the soil conditions. A total of 226 soil samples were collected for the RI/FS from 58 separate locations on the site. Over 100 of these soil samples were submitted to an approved laboratory for chemical analysis. The analytical results from these soil samples, together with the information obtained during previous investigations, fully characterized the distribution of pesticides in the soil at the site.

The results of the RI/FS determined that the concentrations of pesticides in the soil are widespread over most of the 62nd Avenue Property. No pesticides were detected above applicable cleanup levels on any of the properties adjacent to the 62nd Avenue Property except: a soil sample collected from the wooded portion of the property directly to the north that contained a single pesticide in concentrations slightly above applicable cleanup levels, and a soil sample collected by Ecology in the storm water drainage ditch located on the east side of the site.

The concentrations of pesticides at the 62nd Avenue Property decrease rapidly with depth. Within 1 to 2 feet of the surface, less than 1/3 of the 62nd Avenue Property contains pesticide concentrations above applicable cleanup standards. Within 2 to 3 feet of the surface, there are only 7 very limited and discrete areas containing pesticide concentrations above applicable cleanup standards. Below three feet of the surface, there are no pesticide concentrations above applicable cleanup standards.

The information derived from the RI/FS was used to evaluate technically feasible remedial action alternatives applicable to the site. A broad range of technologies were identified that could meet the remedial action objectives for the site. These technologies were evaluated and compared based on the criteria set forth in WAC 173-340-360. Protection of human health and the environment was the most important criterion used to evaluate and compare the various alternatives. This evaluation process resulted in the selection of a preferred remedial alternative. All other remedial alternatives were ruled out because they were either technically impractical, inconsistent with current or planned future uses of the property, or disproportionately expensive.

(WAC 173-340-810). These documents have been combined into one comprehensive CAP to minimize duplication of effort and to expedite the cleanup action.

The CAP has been organized into the following sections:

- **Section 2.0 - Background:** Section 2.0 provides a description of the site, background, and a summary of previous work conducted at the site. The previous work included the site location and description, geologic and hydrogeologic setting, a summary of previous subsurface assessment investigations, and RI/FS activities.

- **Section 3.0 –Technical Elements:** Section 3.0 provides a summary of the technical elements for the CAP, including a discussion of the applicable or relevant and appropriate requirements (ARARs), constituents and media of concern, applicable cleanup levels, and points of compliance.

- **Section 4.0 – Design and Implementation:** Section 4.0 describes the components of the cleanup action consistent with the requirements of the Engineering Design Report.

- **Section 5.0 – Confirmational Sampling:** Section 5.0 references compliance sampling requirements provided in the SAP.

- **Section 6.0 – Schedule:** Section 6.0 provides a preliminary construction schedule.

- **Section7.0 – Documentation Requirements:** Section 7.0 summarizes the documentation to be provided.

- **Section 8.0 – References:** Section 9.0 lists the references sited in this CAP.

2.0 BACKGROUND

This section provides a brief summary of previous work completed at the site. A more detailed summary of the results of previous site investigations is provided in the RI/FS report. A list of references is included in Section 9.0 of this CAP.

2.1 SITE LOCATION AND DESCRIPTION

The entire site consists of a residential lot located at 18115 62nd Avenue Northeast, the northwest portion of the Preschool Property located at 6124 NE 181st Street and a small portion of the property adjacent and north of the 62nd Avenue Property in Kenmore, Washington (Figure 1 and 2). The portion of the site addressed by this CAP is the area where soil contains concentrations of one or more of the target pesticides above the applicable cleanup levels. This includes the 62nd Avenue Property and a small potion of the north-adjacent property (referred to as the site in this CAP). As discussed below, interim actions conducted at the Preschool Property have cleaned up the soils in this portion of the site.

The site is located approximately 1,200 feet from the northern end of Lake Washington and is currently zoned for residential use by the city of Kenmore. Land use surrounding the site includes single-family residences to the northwest and east; a vacant, vegetated lot to the north; a multi-unit condominium building to the west-southwest; and a preschool to the south (Figure 2). Residences in the vicinity of the site are connected to the municipal water supply and the sewer discharges to King County Department of Natural Resources, Industrial Waste Program. The future land use of the immediate site area is projected to remain single family or multi-unit residential.

The legal description for the 62nd Avenue Property is:

The portion of Government Lot 3, Section 11, Township 26 North, Range 4 East W.M.,
in King County, Washington, described as follows:

Beginning at the north quarter corner of said Section,
Thence south 2^0 41' 16" W along the centerline of said Section, a distance of 1000.151 feet;
Thence west 30.03 feet to the true point of beginning;
Thence west 152.705 feet;
Thence south 99.33 feet;
Thence north 87^0 14' 47" E to a point from which the true point of beginning bears north $2^0$41'16"E;
Thence north 2^0 41' 16" E to the true point of beginning;
(Being known as Lot 2, Block 8, Waverly Park, according to the unrecorded plat thereof, except the southerly 85.00 feet, as measured along the west line thereof, and Lot 3 in said block, except the northerly 65.00 feet as measured along the west line thereof).

The 62nd Avenue Property is currently developed with a residential home with ground level and second-floor living units and a separate two-car, dirt-floor garage. The floor of the ground-level apartment is a concrete slab approximately two to three feet below the outside grade. A gravel driveway is located along the northern portion of the 62nd Avenue Property. Lawn, shrubs, or other vegetation covers the remaining areas of the site.

2.2 HISTORIC USE

Mr. Sheridan Martin owned the 62nd Avenue Property between 1969 and 1986 and operated a pest control company called Able Pest Control, Inc. from the residence. In late 1985, Mr. Martin sold Able Pest Control, Inc. to Mr. Tom E. Reed and Mr. James W. Nation. Mr. Reed and Mr. Nation formed a corporation named Able Pest Control, Inc. This corporation operated at the 62nd Avenue Property between November 1985 and January 1986. Operations at the 62nd Avenue Property conducted by both corporations involved storing and dispensing pesticides for off-site use. The pesticides were stored and dispensed in an area underneath the back porch located at the southwestern corner of the building.

The 62nd Avenue Property was sold to Ms. Schlittenhard on November 14, 1986. Ms. Schlittenhard converted the residence into two apartments, one on the ground-floor level and the other on the upper level of the residence. In 1994, during expansion of the ground-floor apartment, soil was excavated from the former pesticide storage and dispensing area located at the southwest corner of the residence to construct a concrete floor slab. The excavated soil was reportedly placed in the southwestern corner of the 62nd Avenue Property adjacent to the fenced property line with the Preschool Property. Prior to the interim remedial action program (SECOR, January 15, 1999), the ground surface in this area was either exposed soil or covered by grass, blackberries, and other vegetation, and it sloped towards the south-southwest with a small (<1 foot) drop at the property line.

2.3 SUMMARY OF PREVIOUS WORK

The RI/FS report contains a detailed description of the work completed to date at the site. This section provides a brief overview of the previous work.

2.3.1 Pre-RI/FS Investigations

Previous investigations at the site included limited soil sampling by Ecology and Seattle-King County Department of Public Health (SKCDPH), soil sampling during excavation adjacent to the residence on the 62nd Avenue Property by Pacific Groundwater Group (PGG), and analysis of household material samples collected by a former tenant of the basement apartment. Results of the previous investigations are described in the RI/FS Report.

2.3.2 Interim Actions

Investigations completed prior to the RI/FS detected concentrations of one or more of the target pesticides in soil above applicable cleanup levels in limited areas of the Preschool Property and throughout the southwest portion of the 62nd Avenue Property. In response to these discoveries, several interim remedial actions were implemented at the site under the terms of an Emergency Agreed Order issued by Ecology. A detailed discussion of the interim actions completed at the site prior to the RI/FS is included in the RI/FS Report.

As discussed in the RI/FS Report, a buffer zone was constructed between the 62nd Avenue and the Preschool Properties in August 1998. A perched groundwater in the vadose zone interceptor trench was subsequently installed in the buffer zone in May 1999 to capture perched groundwater in the vadose zone that possibly contained concentrations of pesticides that may migrate from contaminated areas of the 62nd Avenue Property to the Preschool Property. Increased infiltration of surface water to the vadose zone during the 1999/2000 wet season resulted in an increased volume of water extracted from the interceptor trench. An Industrial Waste Discharge Authorization was received from the King County Department of Natural Resources, Industrial Waste Program for direct discharge of the extracted water from the vadose zone interceptor trench to the sanitary sewer. Monthly water samples have been collected from the vadose zone extraction system, analyzed for the target pesticides, and reported to King County Industrial Waste and Ecology. The perched groundwater in the vadose zone extraction system is currently operational and will remain in-place until the final cleanup is completed.

Soil samples have been collected from the buffer zone on a quarterly basis during 1998 and 1999 to evaluate whether concentrations of pesticides continue to migrate from the 62nd Avenue Property to the Preschool Property. During December 1999, soil samples were collected from the Preschool Property south of the buffer zone to evaluate whether concentrations of pesticides were present. Several soil samples in the northwest corner of the Preschool Property contained concentrations of the target pesticides above the MTCA Method B soil cleanup levels. Therefore, as an interim action, additional excavation was performed to remove the contaminated soil from the Preschool Property. Approximately six cubic yards of soil was excavated from the Preschool Property and is currently stockpiled at the 62nd Avenue Property on visqueen plastic pending disposal during the final cleanup. Soil samples were collected from the Preschool Property which confirmed removal of contaminated soils prior to backfill and re-sodding of the remediated area. Since January 1999, the buffer zone has been monitored on a monthly schedule. Compliance monitoring to be conducted after completion of the soil removal is discussed in Section 5 of this CAP and the SAP included in Appendix C.

During January 2000, an interim action to limit the volume of surface water runoff on the site was installed by Farallon. The interim action included re-routing the roof drain lines from the residence and garage to discharge off-site to the storm water drainage ditch along 62nd Avenue.

Exploratory Boring SB-1 (Figure 2) was completed at the site as part of an interim action to evaluate the local stratigraphy/hydrogeology to address Ecology's concerns that

The RI/FS selected Alternative 5, which includes the excavation and off-site disposal of soil from the site that contains concentrations of one or more of the target pesticides above the MTCA Method B residential soil cleanup levels based on the carcinogenic formula values listed in CLARC II is described in Section 4.1 of this CAP. A total volume of 1,400 tons of soil is estimated for removal from the site.

2.4 ENVIRONMENTAL SETTING

2.4.1 Geology

According to geologic mapping by Galster and Laprade (1991) and Minard (1983), the site is located on the Kenmore Upland ridge which is underlain by Vashon Till. This till is locally underlain by the Esperance Sand and the Lawton Clay (Galster and Laprade, 1991).

The Esperance Sand outcrops to the east and south of the site in the valleys and lowlands along the margins of Lake Washington. The Lawton Clay outcrops in the creek that forms the small valley trending north-south approximately 300 feet west of the site parallel to 61st Avenue NE.

Exploratory Boring SB-1 was advanced at the site as part of an interim action to evaluate the local stratigraphy and hydrogeology. An interval of glacial till extending from the surface to 49.5 feet bgs was encountered in Exploratory Boring SB-1. These results are consistent with regional geologic mapping.

2.4.2 Hydrology

Groundwater migration in the Puget Sound Region is generally confined to the most recent alluvial deposits overlaying the glacial till or over-consolidated sands and gravels (Esperance Sand) which underlie the glacial till. The dense and relatively impermeable nature of the till and the commonly discontinuous lateral continuity of the groundwater-bearing materials impede lateral and vertical migration of the groundwater. Documented laboratory testing has shown that the permeability of glacial till typically ranges from 10^{-5} to 10^{-7} centimeters per second. This permeability range is considered to be relatively low. The Esperance Sand represents the first possible significant water-bearing zone underlying the site vicinity.

Perched groundwater in the vadose zone encountered within the upper 3 feet of soil underlying the site appears to be limited to the wet season based on observations by Farallon during the summer and early fall of 1999. The extensive drilling program conducted at the site for the RI/FS and subsequent exploratory boring (SB-1) did not encounter nor observe a definite perched groundwater zone. Based on the soil boring (SB-1), moist conditions were observed in the vadose zone which is characteristic of

separate perched groundwater. Neither the Esperance Sand nor a groundwater-bearing interval was encountered in boring SB-1 to the total depth explored of 49.5 feet bgs.

2.4.3 Land Use

The site and surrounding properties are zoned and used for residential development. The future and continued use of the area will be residential. The Preschool Property will continue to be a preschool for young children.

2.4.4 Surface Water

The site and other properties in the vicinity slope to the south and west. Surface water runoff from the northern, and southwestern, sides of the 62nd Avenue Property flows to the south-southwest into the buffer zone and is captured in the interceptor trench. Surface water from the southern eastern portion of the 62nd Avenue Property flows to the south, towards the driveway of the Preschool Property. Surface water from the eastern portion of the 62nd Avenue Property flows to the ditch on the west side of 62nd Avenue. During January 2000, an interim action was implemented to limit the volume of surface water runoff flowing toward the buffer zone and to re-route the roof drain lines from the residence and garage to discharge off-site to the storm water drainage ditch on the east side of the site.